PRENATAL EXPOSURE TO CHLORDECONE AND INFANT'S GROWTH IN GUADELOUPE

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Background and Aims: The estrogenic insecticide chlordecone was extensively used from 1973 to 1993 in French West Indies, to control banana root borer. Its persistence in soils has lead to the widespread pollution of the environment including tap water sources and crops. Foetal exposure to endocrine disrupting chemicals may increase obesity risk. The effect of prenatal chlordecone on infant's growth is unknown. Our objective was to study the association between prenatal chlordecone on infant's growth at birth and 3 months.
Methods: 1042 pregnant women have been enrolled in a prospective cohort study in Guadeloupe between 2004 and 2007. A sub-cohort has been followed at 3, 7 and 18 months with weight and height collected in 303 term newborns at birth and in 248 infants at 3 months. Chlordecone has been assessed in 253 maternal blood samples at delivery and in 211 cord blood samples (detection limit =0.06 ng/L).
Results: Chlordecone has been detected in 55.9% of cord blood samples and in 89.7% of maternal samples. When detected, the median value for chlordecone was 0.30 ng/ml in cord blood and 0.39 ng/ml in maternal blood. Newborns with chlordecone in cord blood higher than the median presented smaller length at birth than newborns with chlordecone below the median or not detected values (p-trend=.02) after adjustment, but no difference in ponderal index, birthweight, or head circumference. Infants with chlordecone level in cord blood higher than the median had higher ponderal index at 3 months (p-trend=.07). Associations were found between chlordecone in maternal blood and ponderal index (p-trend=.04), weight (p-trend=.003) and weight gain at 3 months (p-trend=.007) after adjustment for maternal age, infant's age, maternal BMI, smoking, alcohol, diabetes, infant's gender, breastfeeding, and lipids.
Conclusion: Chlordecone at birth was associated with a decreased length at birth and increased ponderal index at 3 months.